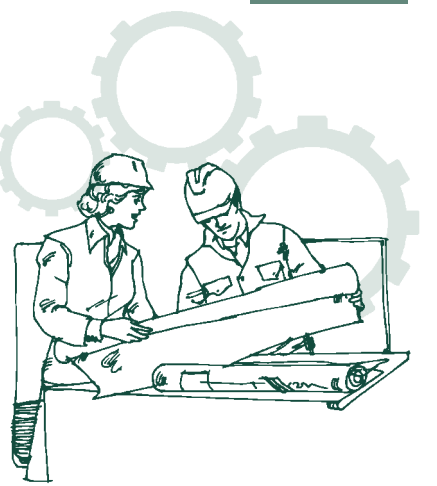
Engineer Intern Certification

State of Tennessee
Board of Architectural and Engineering Examiners



BACKGROUND INFORMATION FOR ENGINEER INTERNS

Introduction

The Board has developed this guide to provide individuals background information on the Engineer Intern certification process, general guidelines for assessing progressive engineering experience, and applying for registration by examination as a professional engineer.

Under Tennessee law, the following individuals meet the educational criteria to sit for the National Council of Examiners for Engineering Surveying (NCEES) Fundamentals of Engineering Examination:

1) Students who have senior standing in an under graduate engineering curriculum that has been accredited by the Engineering Accreditations Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET); or

2) Individuals who have obtained an undergraduate engineering degree accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET) or an undergraduate engineering degree determined to be substantially equivalent to an ABET-accredited degree.

Application is made to and approval must be received from the Tennessee Board to sit for the Fundamentals of Engineering Examination. Senior student applications can be obtained from the Board's web site or from the Dean's office at the Colleges of Engineering with ABET-accredited programs. For individuals who already have undergraduate engineering degrees, applications can be obtained from the Board office, or from the Board's web site. Passage of the Fundamentals of Engineering examination with a score of 70 or above entitles one to receive Engineer Intern Certification. Your certification, issued by the Tennessee Board, is good indefinitely. Once you have obtained Engineer Intern Certification, the individual may use the title "Engineer Intern"; however, this certification does not entitle the individual to practice engineering. After a minimum of four-years of progressive engineering experience under the direct supervision of a registered professional engineer, an individual with Engineer Intern Certification is eligible to apply for registration by examination as a professional engineer in Tennessee.

What constitutes progressive engineering experience?

The Special Committee on Experience Evaluation of the NCEES has developed the following guidelines for the work areas and skills an engineer intern must develop to obtain progressive engineering experience.

PRACTICAL APPLICATION OF THEORY

- **ANALYSIS**—of operating conditions; performance assessment; feasibility studies; constructability, value engineering; safety; environmental issues; economic issues; risk assessment; reliability
- **DESIGN AND SYNTHESIS**—construction plan or specification preparation; product specifications, component selection; maintenance and social implications of final product
- **TESTING METHODS**—developing or specifying testing procedures; verifying functional specifications; implementing quality control and assurance; maintenance and replacement evaluation
- **IMPLEMENTATION METHODS**—of engineering principles in design, construction, or research; performance of engineering cost studies; process flow and time studies; implementation of quality control and assurance; safety issues; environmental issues
- **SYSTEMS APPLICATION**—evaluation of components of a larger system; evaluation of the reliability of system parts; design and evaluation of equipment control systems while considering ergonomics, utility, manufacturing tolerances, and operating and maintenance concerns
- **SIGNIFICANCE OF TIME IN THE ENGINEERING PROCESS**—difficulties of workflow; scheduling; equipment life; corrosion rates and replacement scheduling
- **EXPERIENCE AND UNDERSTANDING**— codes, standards, regulations, and laws that govern applicable engineering activities

MANAGEMENT OF ENGINEERING

Engineering management includes supervising staff, managing engineering projects, and managing and administering technology as it is applied in the field or in construction. It may involve:

- **PLANNING**—developing concepts, evaluating alternative methods

- **SCHEDULING**—preparing task breakdowns and schedules
- **BUDGETING AND CONTRACTING**—cost estimating and control; contract development
- **SUPERVISION**—organizing human resources; motivating teams, directing and coordinating projects
- **PROJECT CONTROL**—complete or partial project control
- **RISK ASSESSMENT**—assessment of risk associated with the progression of the project.

COMMUNICATION SKILLS

- Accumulation of Project Knowledge through interpersonal communication with supervisors, clients, subordinates, or team interaction.
- Transmission of Project Knowledge in verbal or written methods to clients, supervisors, subordinates, general public, or team members. Examples would be via meetings, written reports, public hearings and reporting or findings and suggestions, other written correspondence and/or verbal briefings.

SOCIAL IMPLICATIONS OF ENGINEERING

- Promotes and safeguards the health, safety, and welfare of the public as demonstrated in daily work activities.
- Demonstrates an awareness of the consequences work performed may incur and a desire to mitigate or eliminate any potential negative impact.
- Follows a code of ethics that promotes a high degree of integrity in the practice of professional engineering.

What are the registration requirements to practice as a Professional Engineer?

If you meet the minimum educational and experience requirements listed below, you are considered eligible to apply for registration as a Professional Engineer by Examination.

- **Educational Requirements**—an undergraduate degree in engineering accredited by ABET (or determined to be substantially equivalent)
- **Experience Requirements**—4 years of progressive engineering experience with Engineer Intern Certification or 12 years of progressive engineering experience without Engineer Intern Certification

The Board utilizes the eight-hour written Principles and Practice of Engineering examinations developed by the NCEES for the examination requirement for registration. All examinations that have been developed by the NCEES are offered in the State of Tennessee. Before you can be scheduled to sit for an examination, your application must be approved by the Board. Applications can by obtained by contacting the Board office, or can be downloaded from the Board's web site.

Why should I become registered as a Professional Engineer?

- Under Tennessee law, an individual who offers or is providing engineering services directly to the public must be registered by the Tennessee Board to offer or provide the respective engineering services. Only registered engineers may seal and sign plans, reports, or other design documents; do consulting work for public or private clients; or publicly represent themselves as being an engineer in Tennessee.
- Dedication and commitment to the engineering profession. Registration also indicates to the public that you have met minimum competence for practicing the profession.
- Engineering registration enables you to be more "marketable" and enhances your ability to change jobs in the private sector.
- Many employers in industry and government require registration to advance to senior engineering positions—opportunities that would not be available to you without a professional license.
- According to national studies, P.E.'s generally enjoy higher pay throughout their careers than non-registered engineers.

For Further information

Please feel free to contact the Board office should you have questions about your Engineer Intern Certification or registration as a Professional Engineer.

Board of Architectural and Engineering Examiners
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State of Tennessee
500 James Robertson Parkway, 3rd Floor
Nashville, TN 37243-1142
615-741-3221 or 800-256-5758
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About the Board

The Board of Architectural and Engineering Examiners was created in 1921 by the Tennessee General Assembly in order to safeguard life, health, and property and to promote the public welfare. The Board is charged with:

- establishing minimum standards for registration for architects, engineers, landscape architects, and registered interior designers; and

- to regulate the practice of architecture, engineering, and landscape architecture, and the use of the title, "registered interior designer" in the State of Tennessee.

The Board is comprised of three architects, three engineers, one landscape architect, one registered interior designer, one public member, and three associate engineers from across the state. Meetings are held quarterly and at other times as deemed necessary. The administrative functions of the Board are overseen by the Executive Director and the Board staff.

We can be contacted at the following address and phone numbers Monday through Friday from 7:00 A. M. to 5:00 P. M. Central Time:

500 James Robertson Parkway, 3rd Floor
Nashville, Tennessee 37243-1142
615-741-3221 or 800-256-5758

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